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Foreign AGRICULTURE

A REVIEW OF FOREIGN FARM POLICY, PRODUCTION, AND TRADE

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Agriculture In Japan: Prewar

by **W. I. LADEJINSKY** *

Despite Japan's rapid strides in industrialization, agriculture was, before the war, the most important segment of the country's economy, providing employment for 40 percent of the population and producing about 80 percent of the food supply. Japanese silk, the raw material for which is furnished by the mulberry bush, represented 90 percent of all the silk entering world trade. Hence, agriculture was indirectly the source of a large part of the foreign exchange with which Japan paid its way internationally.

Many technical improvements, directed primarily toward increased yields, were sponsored by the Government, and Japanese farming in the decades before the war was going through a "chemical and botanical revolution." This revolution, while successful, was limited in scope. Despite the increased yields obtained, the majority of Japanese farmers, with an average of only 2.7 acres of cultivated land per family, could not make ends meet from agriculture alone, even in years of relatively good farm prices, and depended on nonfarm employment for about one-fourth of their income. The causes underlying this situation may be traced to policies that shaped Japan's industrialization, the country's topography, the pressure of population on a relatively small cultivated area, the uneconomic size of holdings, and a widespread tenancy system. All these factors conspired, as it were, to keep Japanese agriculture in a chronic state of depression; they also bear upon Japan's wartime and post-defeat problems.

Physical Features

TOPOGRAPHY

Japan proper[1] consists of the mainland or the Island of Honshu, the northern Island of Hokkaido, the southerly Islands of Kyushu and Shikoku, and a chain of small islands (Ryukyu) to the south of Kyushu. Despite climatic and other differences, all these islands are closely related topographically, economically, and administratively and may therefore be treated as one unit. The area of Japan as thus defined totals 147,416 square miles, which is about equal to that of the State of Montana. The maximum length from north to south is 2,100 miles and from west to east 200 miles.

From the point of view of topography, as well as of climate and soil, Japan may be classified among the poorer agricultural countries. The topography of the country is generally steep and mountainous. Roughly 75 percent of the area is hilly or mountainous, the slopes of which are usually too steep and the soils too thin for ordinary cultivation. Since the mountain regions occupy the central and greater part of the country, there are no extensive plains such as are found in continental countries. The typical plains of Japan are mainly narrow coastal lowlands; they are found also along the banks of some of the larger rivers or along the bottoms of narrow steep-sided valleys.

This preponderance of highlands with steep slopes and rock wastes sets definite and striking limits to the cultivated area and explains why not more than 15 million acres, or less than 16 percent of the total estimated land area of Japan, is cultivated. Compared with other countries the ratio is small; before the war Italy cultivated 41 percent, Germany 40 percent, France 39, and Great Britain 22 percent of the total land area. Even in continental United States, 18 percent of the total area is under cultivation.

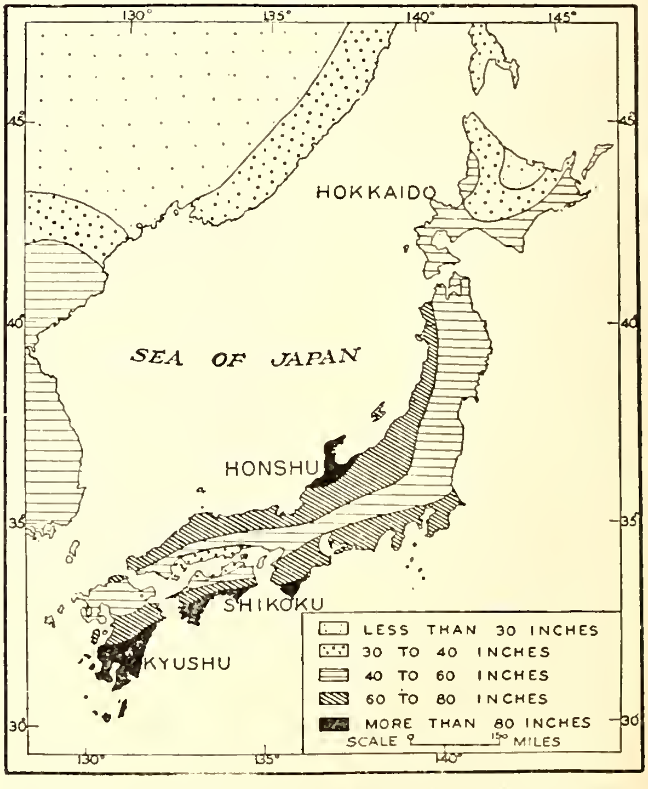

FIGURE 1.—Distribution of average annual rainfall in Japan.

(Adapted from Bergsmark, Daniel R., ECONOMIC GEOGRAPHY OF ASIA, 1942, p. 381.)

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*Office of Foreign Agricultural Relations.

This is the first of two articles on Japanese agriculture; the second will cover wartime developments and postwar prospects.

[1] Hereinafter referred to as Japan.

CLIMATE

The wide variation in latitude between the northern and southern extremes of Japan (approximately mid-Maine to almost the southern boundary of Georgia) suggests a variety of climatic zones. Generally speaking, the temperature of northern Japan is much like that of northeastern United States; Tokyo, mid-Japan, is the counterpart of Raleigh, N. C.; and in Kagoshima (southernmost part of Japan), the seasonal temperatures are similar to those in Montgomery, Ala.

From the point of view of fully utilizing the available soil resources, Japan enjoys ample precipitation. Rainfall for the entire country ranges between 45 and 100 inches annually. From north to south, and through the entire northern and some of the central part of Japan, precipitation varies from 40 to 60 inches. The heavier rainfall occurs to the west and south of that belt. (See fig. 1.) The seasonal rains in June and July, together with the fairly dry weather in August, are peculiarly suited to the growing of irrigated rice. On the whole, precipitation is sufficient to meet the needs of Japanese agriculture, and normally almost no region suffers from a shortage of water for crops. When droughts occur, they are usually of a local character.

SOILS

The soils of Japan are of many kinds with different characteristics, but for purposes of description, three main groups may be defined: (1) The podsolized soils of a large part of Hokkaido and of the highlands of Honshu, (2) the Brown soils of southwestern Hokkaido and the northern and central parts of Honshu, and (3) the Yellow and Red soils of the remaining part of Honshu, together with all of Shikoku and Kyushu.

TABLE 1.—*Number of families in Japan, agricultural and total, specified years*

Year	Total families	Agricultural families	
		Number	Percentage of total families
	Thousands	*Thousands*	*Percent*
1886	7, 747	5, 518	71. 2
1920	10, 578	5, 573	52. 7
1930	12, 166	5, 600	46. 0
1931	12, 160	5, 634	46. 3
1932	12, 343	5, 643	45. 7
1933	12, 560	5, 623	44. 8
1934	13, 499	5, 617	41. 6
1935	12, 974	5, 611	43. 2
1936	12, 982	5, 597	43. 1
1937	13, 356	5, 575	41. 7
1938	13, 407	5, 519	41. 2
1939	13, 592	5, 492	40. 4

Compiled by the Office of Foreign Agricultural Relations from official sources.

Japanese soils do not possess a high degree of natural fertility. Instead, the greater part appear to be inferior in this respect, and large production seems to have been obtained in most cases only by careful attention to the needs of each particular soil situation. In upland and paddy soils, where a legume is grown as a winter crop, lime must be applied to make up the deficiency of calcium. The application of phosphorus is often found profitable, and in certain cases potash is necessary. Nearly all the soils are strongly deficient in nitrogen. Painstaking efforts to meet the needs of these soils may be taken as the most important reason for the success Japanese farmers have had in securing the present high level of production.

Farm Population

About the middle of the last century, when Japan came into contact with the West, almost four-fifths of the people were classed as farmers. By 1930, farmers constituted only 48.4 percent of the total, whereas the number of persons engaged in industry and commerce, respectively, had risen from 3.8 and 7.1 percent to 18.1 and 15.3 percent.

More recent data show that by 1939 farm households accounted for only 40 percent of the total. This declining ratio resulted, however, not so much from a decrease in the farming class as to an increase in the nonfarm population. In fact, there was an increase in the total number of agricultural families, which reached a maximum of 5,642,500 in 1932 as against 5,518,000 in 1886. Since 1932 the number of agricultural families has declined by 150,000. This must be attributed to the severe crisis in Japanese agriculture that was most pronounced in the early 1930's. On the whole, households remained relatively constant and in 1939 amounted to 5,492,000. (See table 1.)

Although the percentage of farm families for the country as a whole is 40 percent, in Hokkaido it is as low as 34 percent; in Iwate (in the north), 64 percent; and in Kagoshima (in the extreme south), 70 percent, or nearly as high as the average for the country 50 or 60 years ago.

Land Utilization

All the land of Japan falls into four groups: Cultivated, forest, pasture and wasteland or *gen-ya*, and land under various other uses. In 1939, cultivated land represented 15.8 percent of the total area, forest land 55.4 percent, pastures 7.8 percent, and land in other uses 21 percent (fig. 2).

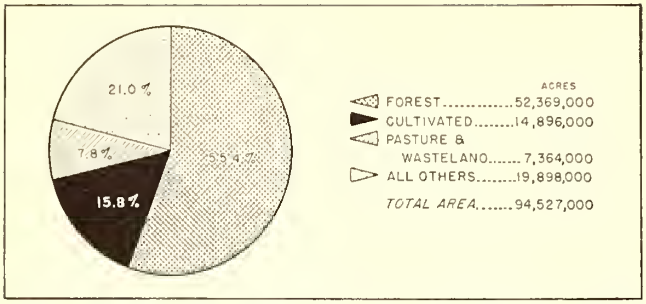

Figure 2.—Utilization of land area in Japan proper, 1939.

Forested hills and mountains, which represent 55 percent of the country's surface, constitute one of the principal limiting factors of agriculture. The forests are primarily mountain forests and generally of poor quality. Nearly half consist of dwarf woods fit only for fuel; the others are suitable for timber. The grasses of the pasture land are of poor quality, and attempts to improve them have not been successful.

The characteristic feature of Japan's agriculture is that the cultivated land is scarce in relation to the rapidly growing population as a whole and to the farm population itself. As the Japanese view it, the pressure of population on the means of subsistence has influenced the country's foreign and domestic policies since about 1870; this explains the development of manufacturing and foreign trade and the official policy of attempting to increase crop acreage and the productive capacity of the land.

The above statement is relevant in the light of the size of the cultivated area of Japan. In this connection, it may be observed that the industrial revolution in Japan did not mean, as it did in England for instance, the elimination of considerable acreage under crops. On the contrary, it meant an expansion in the acreage at high cost. The result was that in 1939 Japan had a cultivated area of 14,896,000 acres, or 15.8 percent of the total estimated area of Japan proper. Hokkaido with 16 percent of the total cultivated land has by far the largest block. The distribution among the other 46 Prefectures ranges between a high of 4.0 percent (Niigata) and a low of 0.7 percent (Nara).

By the time of the Meiji Restoration (1868) most of the level land had already been taken up by the farmers, and they had to turn to the remaining lowland, mountain slopes, and hillsides in spite of heavy expenditures and other unfavorable conditions. As a result, the cultivated area between 1880 and 1939 increased from 10,594,000 to 14,896,000 acres, or an increase of 36 percent. Despite this gain, nearly 5.5 million farm households press upon less than 15 million acres of cultivated land.

Within a period of some 60 years the cultivated area increased by nearly 4,000,000 acres. An examination of the figures for 1918–39 reveals, however, that practically no expansion of acreage took place in the last 2 decades of that period. It was achieved during 1918–21; in 1921 Japan attained the largest cultivated area to date, 15,100,000 acres, after which the upward trend seems to have stopped.

Land Tenure

The fact that 5,492,000 farm families cultivated 14,896,000 acres in 1939 indicates that the size of farm units is quite small, averaging 2.7 acres. A cross section of Japan shows a gradual increase in the size of farm units from south to north, but with considerable variations in individual Prefectures. In southwest Japan, the farm units are generally under 2 acres in size, with some of the holdings along the Inland Sea averaging 1.5 acres. In northern Honshu this figure increased to 3.5 acres, and in Hokkaido the farms average 12.5 acres.

As to the size of holdings actually cultivated, 1939 data show that 34 percent of all households cultivate less than 1.2 acres each; 33, from 1.2 to 2.4 acres; 24, from 2.4 to 4.8 acres, and only 9 percent cultivate more than 4.9 acres (table 2).

Table 2.—*Number of farm households in Japan, classified according to size of area cultivated, 1933 and 1939, with total acreage cultivated, 1933*

Size of cultivated area	1933				1939	
	Cultivated area		Farm households		Farm households [1]	
	Acreage	Percentage	Number	Percentage	Number	Percentage
	1,000 acres	*Percent*	*Thousands*	*Percent*	*Thousands*	*Percent*
Under 1.2 acres	1,237	8.4	1,921	34.1	1,854	33.8
1.2 and under 2.4	3,724	25.4	1,928	34.3	1,800	32.8
2.4 and under 4.9	4,817	33.0	1,248	22.2	1,326	24.1
4.9 and under 7.4	2,055	14.0	319	5.7	314	5.7
7.4 and under 12.2	1,333	9.1	130	2.3	122	2.2
12.2 and over	1,482	10.1	77	1.4	76	1.4
Total	14,648	100.0	5,623	100.0	5,492	100.0

[1] The 1933 cultivated area is an estimate by Hidetoshi, Isobē. LABOUR CONDITION IN JAPANESE AGRICULTURE. Utsunomiya Agr. Col. Bul., Sec. B, v. 2, No. 1, 1937, p. 5, table 2.

Compiled by the Office of Foreign Agricultural Relations from official sources.

The total area cultivated by each group is not given in Japanese agricultural statistics, but an unofficial estimate prepared for 1933 is revealing. The first two groups mentioned, comprising 68 percent of all the families, cultivated an estimated 34 percent of all the land; whereas on the opposite end of the scale one finds three groups, constituting 9 percent of the families, who cultivated 33 percent of the land. Whether they own them or not, most Japanese farmers work on small plots which often resemble gardens rather than fields.

OWNERSHIP

Japan's limited cultivated area precludes the concentration of land in great holdings. Official statistics record only 3,547 landowners with over 125 acres each, the average size of these holdings being 300 acres, and 46,000 with an area of from 25 to 124 acres, or an average of 57 acres.

Notwithstanding the scarcity of large properties, there is a striking concentration of landownership in Japan. Data of the Ministry of Agriculture and Forestry throw little light on the exact distribution, but an unofficial estimate indicates that, although 50 percent of all the farm households own only 9 percent of all the land, 7.5 percent of the households own 50 percent of the land.[2] The corollary of this is that the holding cultivated by a Japanese farmer does not correspond with the amount of land owned by the same farmer.

TENANCY

The inequality in landownership in Japan is expressed in terms of owners, part tenants, and tenants.[3] The second group is composed mainly of the 2,331,000 families who in 1939 owned less than 1.2 acres each, and the third group consists of farmers who own no land at all. Under the circumstances, both groups are compelled to rent from those in whose hands the land is largely concentrated. Of the 5,492,000 farm households enumerated in 1939, 31 percent were independent farm owners, 42 percent part owners, and 27 percent tenants who owned no land at all. (See table 3.)

An investigation of the distribution of tenancy by Prefectures reveals that in Hokkaido 44.4 percent of all farm households were tenants. In Osaka the figure was 43.1 percent. In only 5 Prefectures was the number of tenants to the total number of farm households under 20 percent; in 15 Prefectures 30 percent or more of the farm households fell into the tenancy category. (See fig. 3.)

In 12 Prefectures from 50 to 60 percent of the cultivated land is worked by tenants, and only in one case (Okinawa) is it under 30 percent.

With so much land worked by tenants, absentee ownership in Japan is very great. In 1939 there were 1,068,000 individuals recorded as owning land who did not cultivate it themselves. The demand for the land is so great that the owners themselves never cultivate the few really large estates as a unit; they prefer, for reasons given elsewhere, to rent their holdings to tenants. One of the largest estates, with an area of 4,000 acres, is divided among 2,486 tenant families.

The scarcity of land and insufficiency of alternative occupations bind the tenant to the land—regardless of the onerous conditions under which he works. Rent contracts for a long period are rare, although there is in existence a so-called "permanent" tenancy system, adopted to facilitate the cultivation of newly reclaimed land. Most agreements, usually oral, are for terms of from 3 to 5 years, but those involving fruit and mulberry gardens usually run from 10 to 15 years. Whether written or oral, both owner and tenant have a right to abrogate the agreement in accordance with established customs. In actual practice this privilege is exercised solely by the landlords, and in recent years it has become one of the basic causes of bitter conflict between landlord and tenant.

A survey of 9,134 villages by the Japanese Ministry of Agriculture and Forestry showed that in 70 percent of the cases the rental from a single-crop field constituted more than 50 percent of the crop and from a two-crop field around 60 percent. The high rental for rice land, paid in kind, forces many a tenant to purchase part of the rice needed for his own consumption before the season is over. A sample study on the degree of self-sufficiency in regard to rice brought out the fact that only 60 percent of the tenant farmers did not need to purchase rice, and 20 percent were self-sufficient for less than 6 months.

TABLE 3.—*Distribution of cultivated area between owners and tenants in Japan, 1939*

Category of farmer and of land	Area	Percentage of total
	1,000 acres	*Percent*
Total cultivated area:	14,896	100.0
Tilled by owners	8,080	54.2
Tilled by tenants	6,816	45.8
Irrigated fields:	7,864	100.0
Tilled by owners	3,793	48.2
Tilled by tenants	4,071	51.8
Dry fields:	7,032	100.0
Tilled by owners	4,287	61.0
Tilled by tenants	2,745	39.0

Compiled by the Office of Foreign Agricultural Relations from official sources.

The rental, high though it is, is not the only charge that the tenant must bear. While the landlord has only the land tax to pay, the tenant must pay a number of other assessments and dues, buy expensive artificial fertilizer, and provide the farm buildings, implements, and seed. Therefore, a tenant's net income is considerably smaller than indicated by the share of the crop that he receives.

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[2] HIDETOSHI, ISOBÉ. LABOUR CONDITION IN JAPANESE AGRICULTURE. . . . Utsunomiya Agr. Col. Bul., Sec. B, v. 2, No. 1, 88 pp., illus. Nippon. 1937. See p. 6, table 2 (B).

[3] In addition to the three groups, there are also a small number of farm laborers, representing only 2 or 3 percent of the total agricultural population. The essential character of Japanese agriculture is family farming.

Farming Practices

INTENSIVE CULTIVATION

With many people on little land, the fields of Japan are cultivated intensively; they are treated much more carefully than many a garden in other parts of the world. The rice fields are graded to level, each one being surrounded by dikes. Many of the upland fields are also leveled and made secure by terracing. The leveling facilitates working, and the land retains all natural or artificial fertilizers, which makes possible the continuous growing of such heavy-yielding crops as irrigated rice, as well as multiple crops on the upland. All this calls for an immense amount of labor.

Although the Japanese are handicapped by a natural infertility of soil in many districts, they obtain high yields per acre. Such marked achievement has been rendered possible not only through abundant application of fertilizers but also through intensive application of labor. Careful cultivation, constant weeding, repeated applications of fertilizers, painstaking watering of crops where irrigation is lacking, in addition to double and multiple cropping—all these are indicative of the intensive cultivation of the fields.

MULTIPLE CROPPING

A characteristic feature of Japanese agriculture is that two successive crops are grown each year on a large part of the land. Two crops of rice are rare, but from 30 to 40 percent of the irrigated rice land is replanted to winter crops, such as wheat and barley, except where the climate is least favorable on account of severe winters. On the upland fields (unirrigated cropped land), also, the same unit of land produces more than one crop each year, the farmers commonly having three or more crops growing at the same time but in different stages of maturity. Because of the practice of double and multiple cropping, there is a distinction in Japan between cultivated and harvested area. For instance, in 1939 Japan's harvested area amounted to 19.9 million acres, or a third more than the land reported as cultivated.

FERTILIZING

Fertilizers are of unusual importance in countries like Japan, where the system of agriculture is very intensive, and where a scarcity of agricultural land makes it important to secure high yields from every field. Understanding the necessity to fertilize, Japanese farmers for many years have fully utilized materials locally available, mainly compost, night soil, green manure, and wood ashes. Bean cake and fish fertilizers were added to this list later, following a development of the soybean industry in Manchuria and of the fish-packing industry in Japan. More recently, large quantities of chemical fertilizers, particularly of ammonium sulfate and superphosphate, have also been employed.

A more exact idea of the fertilizer consumption in Japan is given in data calculated for the year 1938, which was fairly representative of the immediate prewar period. According to these figures, fertilizer supplies that year were sufficient to place on each cultivated acre approximately 110 pounds of nitrogen, 61 of phosphoric acid, and 67 pounds of potash. Of the nitrogen applied, about 41 percent came from chemical fertilizers, 45 from farm-supplied materials, and 14 percent from commercial organic materials. Of phosphoric acid, the percentage from each of these is of a similar order; but of the potash about 75 percent came from farm-supplied materials.

When one crop follows another closely, as in multiple cropping, plants begin their growth in a soil largely depleted of available nutrients, and vigorous growth is dependent to an unusual degree upon supplies from the outside. More direct evidence on this point is available in the results of fertilizer experiments reported from a number of agricultural experiment stations. One such report, representing an average of results from soils of all Japan, shows that, without the addition of any artificial fertilizer at all, the average yield was 48 percent below the yield of plots fully fertilized. With nitrogen alone absent, phosphorus and potassium being supplied, average yields were 45 percent below those of plots fully fertilized. In plots lacking phosphorus only, the drop in yield was 12 percent; in the absence of potassium, it was 9 percent.

USE OF LABOR AND EQUIPMENT

The intensive work performed on Japanese farms, from planting to harvesting, is carried on almost exclusively by hand. With some minor exceptions, motor-driven machines are scarcely ever used in seeding, fertilizing, and harvesting, although animal labor often is used in plowing. Even in Hokkaido, which is most suited for mechanization, animal-drawn farm implements have been in use for generations, and no need has been felt for replacing them with modern equipment.

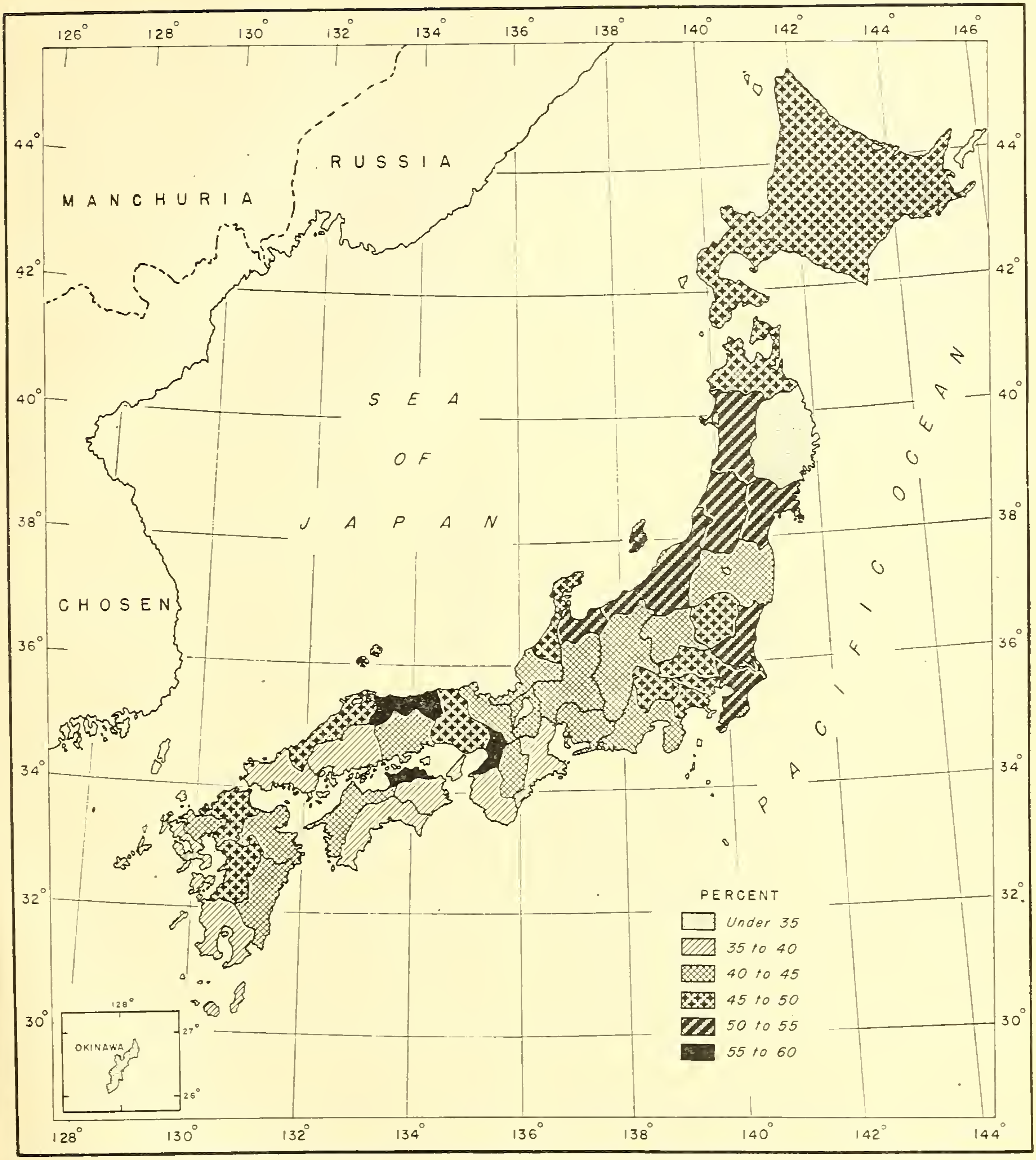

FIGURE 3.—Percentage of cultivated land in Japan worked by tenants, 1939.

The farm equipment used in field work is light and of the simplest construction. The dikes and ditches could not stand heavy equipment, and in the tiny fields too much maneuvering of the machinery would destroy the crop. Aside from physical factors, mechanization has been retarded for economic reasons. Human labor is one of the things that farms have in abundance; this in itself tends to preclude the use of labor-saving devices.

To assume, however, that mechanization is a totally unknown quantity would be erroneous. Official data show that between 1927 and 1937 the number of electric motors and gasoline engines on farms increased from 52,000 to 247,000 (1 machine to 107 and 22 farm households, respectively), and pieces of equipment (threshers, hullers, rice cleaners, pumps, etc.) during the same period increased from 220,000 to 375,000 (1 to 25 and 15 households). In the main, the machines are employed on the farm for the processing of agricultural products, and no mechanical equipment is used directly in raising crops.

A feature of this power equipment, which reflects the small size of the farmer's holding, is its low horsepower capacity. Of the units owned by farmers and farm organizations in 1937, for example, gasoline engines averaged 2.9 hp. and electric motors 1.5 hp. By far the majority of the electric motors owned by farmers are rated at only 0.25 to 2 hp. In 1937 the horsepower capacity of the mechanical equipment of the 5,575,000 farm families amounted to 623,000 hp., or slightly more than 0.10 hp. per family.

Agricultural Production

The cultivated land of Japan falls into two main groups: Rice fields (irrigated land) and upland farms (unirrigated land) that produce other crops. Many of the cultivated crops in the uplands, as indicated earlier, are also grown on rice fields as winter crops. The total area under all crops in 1939 was 19,919,000 acres. (See fig. 4.)

The distinguishing feature of Japanese agriculture is the preponderance of food crops, of which rice is the most outstanding. The emphasis upon rice is probably no accident, because, to some extent at least, the type of agriculture developed has been influenced by the amount of cultivable land available in relation to the population. With relatively little land fit for cultivation, a rapidly growing population demanding larger supplies of food, and a fixed policy of the Government to encourage self-sufficiency in food, the concentration upon food crops was natural. Rice became the dominant food crop, because, under Japanese conditions, it yields more calories per unit of land than any other cereal.

Individually, other food crops are not so important to Japan as rice, but taken together they utilize 41.2 percent of the harvested area. All food crops account for 80.4 percent of the total land under crops. With such a high proportion of the cropped land devoted to raising food, there is little room for industrial crops—only 4 percent of the total.

RICE

Of the 12.4 million acres on which cereals were grown in 1939, rice alone accounted for 7.8 million acres, or 63 percent of the total, and the value of the rice crop was estimated at 2.874 million yen, or 53 percent of the total value of Japan's agricultural output. Rice is used at practically every meal; although other grains also are consumed, they supplement rather than replace rice. Japan's food problem is inextricably bound up with increasing the supply of rice to keep pace with the growing population. For this reason, Government efforts to maintain sufficient food supplies have been mainly concentrated on increasing the unit yield of rice rather than the acreage.

TABLE 4.—*Acreage, yield, and production of rice in Japan, 1878–1944, with percentage change from 1878–82*

Period	Acreage		Yield per acre		Production	
	Total	As percentage of 1878–82	Quantity	As percentage of 1878–82	Quantity	As percentage of 1878–82
Average:	*1,000 acres*	*Pct.*	*Lbs.*	*Pct.*	*Million lbs.*	*Pct.*
1878–1882 [1]	6,244	100	1,512	100	9,441	100
1888–1892 [1]	6,708	107	1,835	121	12,306	130
1898–1902 [1]	6,950	111	1,925	127	13,378	142
1908–1912 [1]	7,247	116	2,212	146	16,028	170
1921–1925 [1]	7,704	123	2,412	160	18,584	197
1926–1930 [1]	7,828	125	2,508	166	19,631	208
Annual:						
1931	7,961	127	2,236	148	17,802	189
1932	7,982	128	2,439	161	19,471	206
1933	7,778	125	2,936	194	22,837	242
1934	7,775	125	2,150	142	16,715	177
1935	7,852	126	2,359	156	18,524	196
1936	7,859	126	2,762	183	21,712	230
1937	7,877	126	2,715	180	21,383	226
1938	7,893	126	2,691	178	21,238	225
1939	7,823	125	2,555	169	[2] 19,990	212
1940					[2] 19,668	208
1941					[2] 17,733	188
1942					[2] 19,990	212
1943					[2] 20,276	215
1944					[2] 19,023	201

[1] NASU, SHIROSHI. ASPECTS OF JAPANESE AGRICULTURE. Pacific Affairs, I. P. R. Internatl. Res. Ser. 168 pp., illus. New York. 1941. [Mimeographed.] See p. 108.

[2] Estimated.

Compiled by the Office of Foreign Agricultural Relations from official sources.

The rice produced in Japan, as in any other rice-producing country, is of two principal kinds—common (nonglutinous) and glutinous. The first includes varieties whose kernels can be cooked so that they remain separate; the second, varieties whose kernels when boiled form a gluey, sticky mass. The acreage under the latter represents from 8 to 9 percent of the irrigated rice area. The nonglutinous type, whatever its variety, is grown under irrigation or where there is standing water at appropriate seasons. In Japan 96 percent of the rice acreage is irrigated; the remaining upland rice area is without irrigation. The cereal is planted in May and June and harvested from August to November.

Acreage, yield, and production of rice showed an upward trend until the early 1930's (table 4). In more recent years the rice acreage has remained practically stationary despite the efforts made to expand

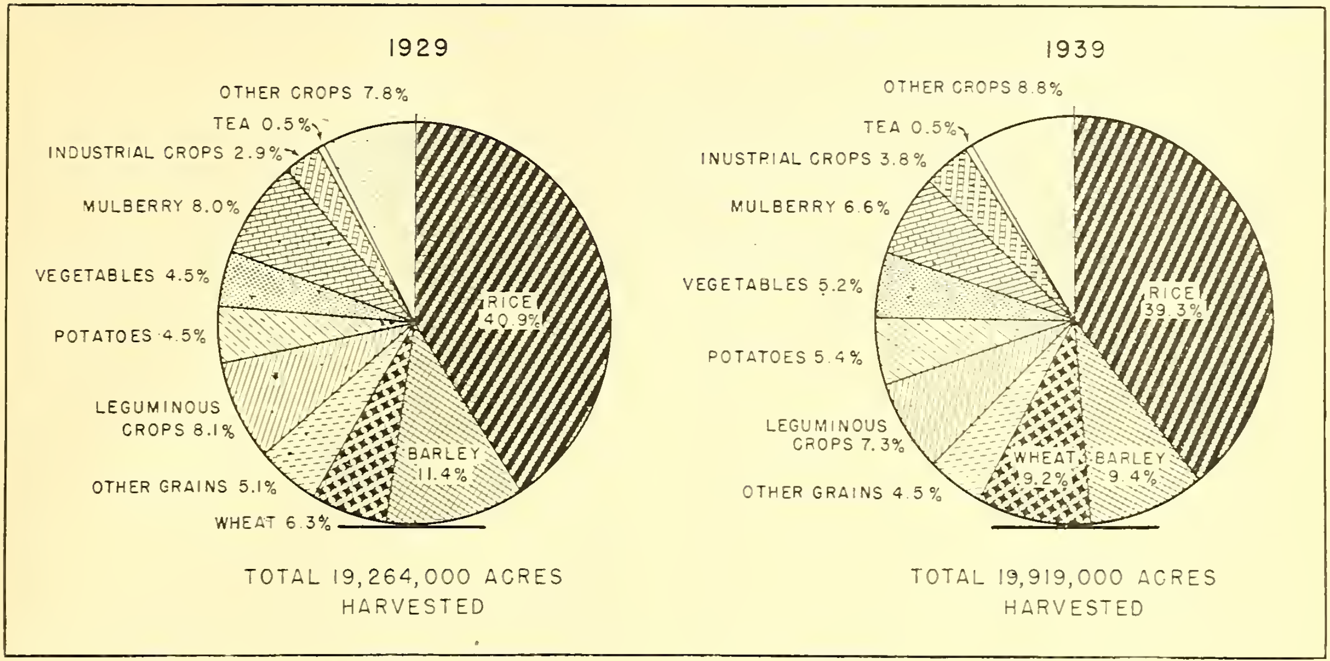

FIGURE 4.—Harvested acreage of specified crops in Japan as percentage of total, 1929 and 1939.

it. During the period of the rapid expansion of the rice area, as well as later on, the land was receiving more intensive and better cultivation. Chemical fertilizers were liberally applied and skillfully utilized. Under the stimulus of these factors rice yields increased from an annual average of 1,512 pounds of brown rice (43 bushels in terms of rough rice) per acre during 1878–82 to 2,616 pounds (75 bushels rough) in 1935–39, or by 73 percent. A comparison of the average Japanese yields with those of such typical rice-producing countries as Burma, Siam, French Indochina, India, Java, and the Philippines shows that the former are roughly three times as large as those in most of the specified countries.

In the past decade or so the increase in yield has been relatively slight, and the likelihood is that in the future the rate of increase may not be so rapid as in the past. Fallowing as a means of restoring the fertility of the land is not practiced on much of the irrigated acreage. Other cereals, such as barley and wheat, and sometimes rapid-growing truck crops, follow rice year in and year out. No true system of crop rotation is generally employed, and soil fertility is maintained by the extensive use of fertilizers. There are indications, however, that neither the additional human effort nor the greater application of fertilizers will result in a proportionate increase in yields.

The greatly augmented production has not been sufficient to take care of Japan's rice requirements because of the growing population and the increasing per capita disappearance, which advanced from about 280 pounds of brown rice (average of four 5-year periods from 1878 to 1897)[4] to 350 pounds during 1935–39. The deficit of rice from domestic sources did not become apparent until the late 1890's. Up to almost the middle of that decade the average production of 18 billion pounds was not only sufficient for the country's needs but left a small exportable surplus. Since then the country has become increasingly dependent upon imports. At the turn of the century annual net imports amounted to about 400 million pounds; in the late 1930's they had risen to over 4 billion pounds, or about 17 or 18 percent of the total consumption. With the increase in imports, a shift took place in the sources from which they were drawn; rice from French Indochina, British India, Thailand, and the United States gradually gave way to colonial rice from Korea and Formosa. Korea supplied 12 and Formosa 6 percent of the Japanese rice consumption during the 1930's.

WHEAT

Wheat is the second most important cereal, although the wheat acreage in 1939 was only 23 percent of that of rice, and the value of the output was only about one-tenth that of rice. Most of the wheat is consumed in the urban centers; and, as far as the farmer is concerned, wheat is largely a cash crop, which provides the means to make all or part of his fertilizer payments. Except in Hokkaido, wheat is a winter crop, grown exclusively on double-cropped land on which it is subsidiary to the summer or principal crop. For this reason, wheat does not compete with rice for the land but with other winter crops, the most important of which is barley.

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[4] SWEN, WEN YUH, and ALSBERG, CARL. JAPAN AS A PRODUCER AND IMPORTER OF WHEAT. Stanford Univ., Food Res. Inst. Wheat Studies 6 : 351–378, illus. 1930. See table 11, p. 377.

In the years immediately prior to 1933, acreage and production had shown little change. The average annual (1923–32) area in wheat was 1,210,000 acres, from which production averaged 32,000,000 bushels. Domestic production accounted for about two-thirds of consumption, the deficit being covered by imports, valued at 45 to 50 million yen annually.

In 1932 the Government launched a 5-year plan for the expansion of wheat production. Judged by augmented acreage, quantity of production and yield, and by the sharp reduction in imports, the plan was successful. Three years after it was put into operation the area was enlarged by 280,000 acres, and by 1939 Japan had 1,826,000 acres under wheat, or 580,000 acres more than in 1932. In 1940 the acreage stood at a record high of 2,062,000 acres.

Yields were relatively high (26 bushels per acre) even before the inauguration of the plan. In the years following the expansion program (1934–39) the average yield was 12 percent higher than in the previous 6 years. Clearly the expansion of acreage, rather than the increase in yields, was primarily responsible for the increase in production. In consequence of the combined development, however, Japan's wheat output rose sharply. The 1939 and 1940 crops were estimated at 61 and 66 million bushels, respectively, the latter figure being more than double the 1932 production.

With the increased output, Japan's net annual wheat imports, amounting to 15 million bushels during the 5-year period 1928–32, were reduced to an annual average of 3.5 million bushels during 1933–36. Data for the years following show that the country changed from a net importer to a net exporter to the extent of some 10 million bushels a year.

The per capita disappearance of wheat in Japan during the years of expanded production showed no increase, and in the years 1937 and 1938 it actually declined from around 0.7 to about 0.5 bushel. But for Japan's policy of maximizing exports, however, domestic production would have been quite sufficient to maintain a per capita disappearance of 0.7 to 0.8 bushel. Another factor must be taken into consideration—consumption of wheat is elastic, depending upon the price of rice. Low rice prices tend to restrict wheat consumption; and, in view of the Japanese preference for rice, a reasonable assumption is that when rice is less expensive than wheat more rice and less wheat will be consumed.

BARLEY

Barley, both naked (hull-less) and common, figures prominently in Japan's food supply. Few Japanese eat barley in preference to rice, and with the rising standard of living, mainly among the urban population, the per capita consumption of barley has declined sharply. But the crop remains an important supplement to rice, especially for the rural population. In 1939, over 9 percent of the harvested area was under barley, and the estimated value of the crop was about 5 percent of the total value of the agricultural output.

The barley acreage has been on the decline for many years. Between 1903–7 and 1928–32 it was reduced from 3.3 to 2.1 million acres, or 36 percent. The 1930's registered a further decline, the average for 1935–39 being 1.9 million acres. Competing crops, notably wheat, were responsible for this decline.

For a long time the reduction in acreage was not reflected in production. The decrease in output between 1903–7 and 1928–32 amounted to only 6 percent. This relatively small decrease in production paralleling a much larger decrease in the harvested acreage is explained by a 33-percent increase in yield per acre of naked barley and 43-percent increase in the case of common barley. Although yields were maintained at high levels during the 1930's, the further decline in acreage reduced the output to an annual average of 71 million bushels (1935–39).

MINOR GRAINS

In addition to rice, wheat, and barley, Japan produces a number of minor grain crops, such as oats, corn, buckwheat, and three types of millet—barnyard, foxtail, and proso. During the 1930's there was little change in the acreage or production of these crops. In 1939 they occupied 913,000 acres, or 4.6 percent of the total cropped acreage. Production that year was reported as follows: Oats, 10 million bushels; buckwheat, 3.4; corn, 3.4; and millet, 7.4 million bushels.

Japan is fully self-sufficient in buckwheat and oats but depends upon imports for one-third of its millet and two-thirds of its corn. In both cases, however, the volume of imports is rather small.

POTATOES AND OTHER VEGETABLES

The output of potatoes, white and sweet, is fairly large, with sweetpotatoes predominating. In 1939 the total potato acreage was estimated at 1,087,000 acres, of which sweetpotatoes accounted for 681,000 acres. In the course of the 1930's the potato acreage as a whole increased by 15 percent and the output by 32 percent. The gain in both was accounted for mainly by white potatoes. The 1939 output of white potatoes amounted to 69 million bushels and that of sweetpotatoes to 129 million.

Japan is a large producer and consumer of other vegetables, including radishes and some other roots. A few vegetables, such as daikon (giant radish) and lotus root, have been consumed by the people for centuries. In recent decades there has been a considerable increase in the output of such items as watermelons, cucumbers, carrots, onions, and eggplants. The per capita disappearance of vegetables other than potatoes averages about 220 pounds (1936).

FRUIT

Fruit is produced in substantial volume both for the domestic market and for export. Mandarin oranges, persimmons, pears, and apples are the principal fruits grown. Owing to certain differences in climate and soil, mandarin oranges are produced chiefly in the southwest and apples in the northeast; persimmons and pears are grown throughout the country. The Prefectures of Shizuoka and Wakayama are noted for their mandarin oranges, and Aomori Prefecture is famous for its apples, producing not less than three-fourths of the total crop.

LEGUMINOUS CROPS

The principal legumes produced are soybeans, other beans, peas, and peanuts. The most important is the soybean. It is a staple food of the Japanese and is used for soy sauce, bean paste, and bean soup. Soybeans are also in demand for a number of industrial products, chief of which is soybean oil.

The 1939 area under all legumes amounted to 1,449,000 acres, of which soybeans are estimated to have occupied 795,000 acres. Because of competition from imported Manchurian soybeans, extension of mulberry-tree plantations prior to the 1930's, and increased acreage under orchards and vegetables, the soybean area declined from an annual average of 1,091,000 acres during the 5-year period 1920–24 to 808,000 acres in 1935–39, or by 26 percent. Production followed a similar course, with a decrease from 18 to 13.5 million bushels. Despite the declining output, consumption of soybeans during the same period increased from an annual average of 32 million to about 44 million bushels. Production of soybeans in recent years has averaged about 30 percent of the country's consumption. The shortage of about 30 million bushels was made up by imports from Manchuria (80 percent) and Korea (20 percent).

INDUSTRIAL CROPS

In 1939 the area under all industrial crops was reported at 754,000 acres as against 555,000 acres in 1929, or an increase of 36 percent. Despite this increase in acreage, industrial crops accounted for only 4.4 percent of the total value of the 1939 agricultural output. Most of the crops are planted on irrigated rice fields. Until about 1932 the acreage tended to decline, largely in consequence of increased supplies either of imported goods or of synthetic substitutes. The upward trend since 1932 resulted from rising prices of a number of the products.

Japanese agricultural statistics divide the industrial crops into four groups: Sugar, fibers, oilseeds, and "other." The share of each category in the total acreage of industrial crops was 6.6 percent, 25.4, 33.3, and 34.7 percent, respectively. The acreage distribution and output of principal industrial crops show how deficient Japan proper is in such products, particularly in fibers. Yet obviously the deficiency did not hinder the country's industrial development.

Pyrethrum.—Of the industrial crops produced in Japan and exported abroad before the war, pyrethrum was outstanding. This important insecticide is used in the form of extracts or liquid sprays. Until 1914, Dalmatia, later a part of Yugoslavia, was almost the only source of pyrethrum. This supply was cut off by the First World War, and Japan was able to seize the market, which it retained until the present war.

Pyrethrum is a perennial plant of the chrysanthemum family. The toxic materials, pyrethrin I and II, are found largely in the flowers. Judged by the large yields of flowers obtained and their high pyrethrin content (resulting partly from the use of improved methods of artificial drying), the pyrethrum industry has done well in Japan. The largest output, 28 million pounds from an area of 71,000 acres, was attained in 1935. A decline in prices in the subsequent 2 years caused a reduction in acreage, which in 1939 amounted to 53,000 acres, with an output of 21 million pounds. Six Prefectures are responsible for 98 percent of the total acreage, but of these Hokkaido alone accounts for 75 percent.

Tobacco.—Tobacco is an important crop in Japan; the acreage in 1939 was placed at about 107,000 acres and the output, at 189 million pounds. Production, under the direction of the Government tobacco monopoly, is carried on by small producers, numbering approximately 320,000, with an average acreage of slightly over 0.3 acre. The tobacco yield averages approximately 1,500 pounds per acre as compared with almost 850 pounds in the United States during recent years. The high yields are attained by liberal applications of fertilizers, all types of tobacco receiving them in some form. The most commonly used fertilizers are decomposed manures, oilseed cakes, rice bran, wood ashes, and superphosphates. Others applied to only a limited extent include fresh barnyard manure, sewage, bonemeal, fish meal, sulfate of potash, and sulfate of soda.

Consumption of tobacco has been rising in Japan, but per capita consumption of over 2 pounds is still low in comparison with most other countries. Corresponding figures for China are 2.8 pounds, for India 3.7, and for the United States about 7 pounds. The small per capita consumption in Japan is attributed to the low incomes of most of the population and to the general abstinence by the Japanese from the use of all types of stimulants.

SERICULTURE

Sericulture plays an important role in both the agricultural and national economy of Japan. The value of the cocoon output in 1939 accounted for 16 percent of the total value of agricultural production. In the same year 1,651,000, or 30 percent, of all the farm families in Japan were engaged in cocoon raising. As to the place of the silk industry in the national economy, during 1935–39 raw-silk exports averaged 21 percent of the total value of exports to foreign-exchange countries.

In a country such as Japan, where arable land is limited and the question of food is given primary consideration, mulberry trees are planted where rice cannot be planted, that is, in upland fields. But it is mainly on the abundant sloping land, which is unsuited for both irrigated and unirrigated food crops, that the mulberry trees are found. The plants are spaced 2 feet apart in rows from 3 to 3.5 feet apart, thus providing about 4,000 plants per acre. In the more mountainous regions bushes give way to dwarf trees, numbering from 1,000 to 2,800 per acre. The leaves provide food for the silkworms, which in turn spin the cocoons.

Sericulture is not a primary occupation of the majority of Japanese farmers when measured in terms of the number engaged exclusively in that one industry. In 1938, for instance, of the 1,618,000 farm families in the industry, only 29,000 engaged in cocoon raising exclusively, and 221,000 families engaged in it as their chief occupation. For the vast majority it is a side line, though an important one indeed.

This leading subsidiary crop, though widespread, is not evenly distributed throughout the country. In the north the mulberry acreage is small, particularly in the Prefectures of Hokkaido and Aomori. From about the fortieth parallel south there is a heavy concentration of acreage. In 1939 Nagano alone was responsible for 12 percent of the total; this, and the acreage of six other Prefectures (Gumma, Fukushima, Saitama, Yamagata, Aichi, and Yamanashi) constituted 44 percent of the total. The distribution of the cocoon output followed closely that of acreage.

In 1930 the area under mulberries achieved its highest level; namely, 1,718,000 acres, yielding an output of 880 million pounds. After 1930, with prices declining, the area decreased to 1,305,000 acres in 1939. The loss of markets caused by the war and the conversion of some of the mulberry area to food crops brought the acreage to about 600,000 acres and the cocoon output to 374 million pounds.

Japanese sericulture for more than a decade before the war was a "problem" industry, chiefly because Japan exported most of its silk to one country, the United States. In 1929, the latter received 97 percent of all Japanese silk exports, the lowest figure in any year during the period of 1929–39 being 80 percent. The fortunes of the farmers were dependent, therefore, upon their ability to dispose of the output at remunerative prices in the United States market. This was not always possible before the war and may be much more difficult after the war.

TEA

Tea production in Japan is second only to silk in commercial importance. It is, to be sure, a weak second when judged by acreage, value of crop, and position in Japan's economy as a whole. The area under tea in 1939 occupied 0.5 percent of the total harvested area, and the value of the crop was 47 million yen, or 0.8 percent of the total estimated value of all agricultural products in that year. Japan ranks fifth in the world as a producer and exporter of tea, following China, India, Ceylon, and the Dutch East Indies. By far the greatest proportion of the Japanese production is green tea, and it constituted the bulk of the prewar exports.

Unlike the tea industry of India, Ceylon, or Dutch East Indies, that of Japan is confined to small holdings of one-quarter of an acre and less. Tea generally does not compete with the crops grown primarily for food; the acreage devoted to it is confined mainly to steep slopes or bare tablelands. The tea soils are poor, but the porous ash-covered rock of the principal producing regions favors production, since the tea plant requires not only an abundant rainfall but also well-drained soils. Intensive application of nitrogenous fertilizers is a prerequisite. In some sections farmers use as much as 230 pounds of nitrogen per acre, in addition to a quantity of phosphates and potash.

The acreage devoted to tea has declined since the last decade of the nineteenth century. In 1892 Japan had 149,000 acres under tea as compared with 118,000 in 1920 and 99,000 in 1939. Although some tea is grown in every Prefecture, with the exception of Hokkaido and Aomori, it is the one crop in Japan that is heavily concentrated in a single Prefecture. Shizuoka, with 41 percent of the total tea acreage, produces 60 percent of the total tea output. Total acreage in the past decade has changed but little, but since 1931 production has shown a continuous and marked increase. The average output of 1935–39 amounted to 114 million pounds, compared with 78 million pounds in 1920–24, or a gain of 46 percent. This was brought about primarily by increasing yields, which in 1935–39 averaged 1,170 pounds as against 700 pounds in 1920–24, or an increase of 67 percent. The rise in yield may be attributed largely to improvement in the technique of growing tea as well as to more intensive picking induced by Japan's improved position in the world tea-export trade. In the period 1930–39 Japan's net exports averaged 34.4 million pounds, or 34 percent of the total output.

LIVESTOCK

Japanese agriculture is rarely associated with livestock raising, although the preponderance of highlands suggests a thriving animal industry. Pastures are poorly developed, and livestock numbers are small.

Cattle, as well as horses, are raised chiefly for draft purposes and stable manure. The number of cattle in 1939 totaled 1,967,000, of which 123,000 were milk cows. The number of horses (1936) was estimated at 1,432,000. Pigs were only half as numerous as cattle; sheep and goats numbered 149,000 and 287,000, respectively. The cattle population increased considerably between 1936 and 1939, but the number of horses declined after 1932, a development which may be attributed to the invasion of Manchuria and the migration of farmers to that region. Japan's more strenuous military ventures since then must have reduced the number of horses still further. The number of sheep was still very small (249,000), although between 1936 and 1939 it increased 2½ times.

In 1939 only 1,531,000 farm families (28 percent of the total) had cattle, and 1,279,000 had only 1 head each. Of the 576,000 families keeping hogs, 378,000 had 1 hog each. In general, the number of cattle per farm household averaged 0.4; that of horses, 0.3; and of hogs, 0.2.

Economic Position of the Farmer

The low standard of living of the vast majority of Japanese farmers explains, in part at least, why the country's small cultivable acreage can support such a large number of people engaged in farming. The results of numerous family-budget studies carried out by the Ministry of Agriculture indicate that, generally speaking, the average peasant cannot make ends meet solely by farming.

An investigation covering one year, a relatively prosperous year (September 1926–August 1927), conducted by the Bureau of Statistics of the Japanese Government, revealed the following: The average monthly income of the 670 farm families investigated was barely sufficient to cover monthly expenditures. Even the peasant proprietor, who owned the land he cultivated, had a yearly income of 1,350 yen as against an expenditure of 1,315 yen, or a surplus of only 35 yen. The status of tenants was considerably worse. If all the investigated groups—owners, part tenants, and tenants—had relied solely upon income from agriculture, every one would have incurred a regular monthly deficit. Similarly, the results of family-budget investigations covering the years 1934, 1935, and the period 1936–38, indicate that, but for subsidiary occupations, the tenants would have shown a deficit of 49 yen, whereas the owners and part owners would have enjoyed surpluses of only 59 and 31 yen, respectively.

A survey of the farmers' income from all sources for the period 1913–34 revealed that, with the single exception of 1913, agricultural income each year fell short of meeting household expenditures and forced the farmers to depend upon nonagricultural income to make up the deficit. The income from subsidiary occupations ranged from 23 to 31 percent of the total income. Of those persons engaged in such occupations in 1937, 8 percent augmented their income from forestry enterprises, 6 from fishing, 10 from industry, 13 from commerce, and 63 from "other" activities.

The household expenditures of these groups throw light upon the low level of living of the Japanese farmers. In 1936 such expenditures on the part of the farm owners averaged 841 yen, or 2.30 yen per day.[5] As these households averaged three ablebodied adults, the actual expenditure per person is less than one yen. It is only through such small expenditures, which are reflected in the budgets dealing with the principal items of household expense, that the meager incomes permit the majority of Japanese farmers to engage in farming.

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[5] Average annual rate of exchange for 1936 : 1 yen = 29 cents.

That agriculture was not a sufficiently profitable enterprise for most Japanese farmers, especially for tenants and part tenants, is further indicated by a statement of the Japanese Bureau of Statistics to the effect that the average tenant and part tenant could count upon a surplus only when the area of his farm was larger than 4.5 acres. The fact that by far the largest number of farmers till an area of less than 2.4 acres is clear evidence of the difficulty of Japanese agriculture as a business. Even the industry and thrift of the farmer cannot obviate the fact that the income of a farm family is the product not only of output per acre but of the number of acres as well. In Japan the output per acre is large, compared to that of most western countries, but the acreage per farm is so small as to make the total income per family only a fraction of that in most western countries.

Conclusion

The difficult conditions under which Japan's agriculture was operating before this war long antedated the great depression of the early 1930's. The depression merely brought into sharp relief forces that had been weakening the country's agricultural economy for many years. The urgent need of putting Japan's agriculture in order had been recognized by those who helped to shape the country's development. A former Minister of War stated:[6] "If we should succeed in solving the agrarian problem, it would be easier to solve the remaining serious social problems." But despite such professions of grave concern, the measures enacted to aid agriculture[7] were not sufficient to accomplish the task at hand.

To be sure, the task was a tremendous one, for it concerned itself with the problems of a limited area of arable land, small holdings, large number of landless farmers resulting in an inequitable tenancy system, and farm indebtedness, with Government agricultural policies and the taxation system both heavily weighed in favor of industry. In sum, all these problems resolved themselves into one of putting Japanese agriculture on a firmer economic foundation.

To state the problem is easier than to prescribe for its solution. If agricultural changes in Japan are to take place in the near future, the setting for them, at least in the early stages, will be a defeated Japan with a thoroughly dislocated national economy. In this connection, a remark made before the war by the Prime Minister is pregnant with meaning: "How can the army be indifferent to farmers' difficulties when it is largely composed of farmers' sons?" Obviously, it cannot remain indifferent over a long period of time. What is true of an army in peacetime as a weapon of political and economic change is even more true of a defeated army, so largely composed of farmers, some of whom are "surplus" farmers. Drastic agrarian changes in the countries of central and eastern Europe followed their military defeat in the First World War; Japan may witness something similar after this one.

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[6] A. K. THE AGRARIAN CRISIS AND THE PEASANTS' MOVEMENT IN JAPAN. *In* [Inst. World Econ. and Politics, Contemporary Japan], pp. 73–93. Moscow. 1934. [In Russian, with English titles of Essays, p. 304.]

[7] LADEJINSKY, W.: AGRICULTURAL POLICIES IN JAPAN: RICE. For. Crops and Markets, 33: 69–96, illus., 1936; FARM TENANCY AND JAPANESE AGRICULTURE, Foreign Agr. 1: [425]–446, illus., 1937; THE JAPANESE SILK INDUSTRY FACES A NEW CRISIS, Foreign Agr. 5: 515–534, illus., 1941; and DAWSON, O. L., RECENT JAPANESE AGRICULTURAL POLICIES, Foreign Agr. 3: 263–274, 1939.

Turkey's Agricultural Land Law*

Turkey, seeking to strengthen its national economy, recently enacted legislation designed to raise the status of its agricultural workers and make them more efficient producers. This new legislation, officially known as the Law Providing Land for Farmers, was approved by the Grand National Assembly on June 11, 1945. If effectively administered, it is expected to have a marked influence—social as well as economic—on Turkey's future agricultural development.

The primary objectives of the bill are (1) to provide land to landless persons and to those having holdings too small to support themselves and their families; (2) to furnish those persons who have land, but lack sufficient means of production, with capital, improvement and operating funds, and with equipment and animals; and (3) to ensure the continuous cultivation of the country's land. The attainment of these objectives will, according to the opinion of many supporters of the bill, (a) raise the farmers' standard of living; (b) bring uncultivated areas into production and thus increase the agricultural output of Turkey; (c) stimulate agricultural interest throughout the country; and (d) create a new pride in ownership and cultivation of land among a large landless segment of the population.

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*Based largely on LAWSON, EDWARD B. TURKEY'S NEW AGRICULTURAL LAND BILL. [Transmitting summarized translation of the law.] U. S. Cons. Rpt. No. 97, 17 pp. June 27, 1945. [Hectographed.]

Position of Agriculture

Turkey has a total population of about 18 million people; of the gainfully employed, 80 to 85 percent are engaged in agriculture. Roughly 5 million persons—the members of an estimated 128,700 landless families and of about 872,800 owning very small acreages—presumably will be benefited by the new bill. The total area of the country is placed at nearly 188.5 million acres, of which 57 million acres, about 30 percent, were reported in 1936 as arable land. Forests accounted for about 13 percent; pastures and meadows, 35; mountains and wasteland, 13; and lakes and marshes, 1 percent.

Lands for Distribution

Although much of the land to be distributed will be taken from private individuals, according to provisions of the law, it will also include (1) land under the authority, ownership, or proprietorship of the State that is not used for public purposes; (2) parts of land that are owned jointly by one or several villages, or a city, which are determined by the Ministry of Agriculture to be in excess of requirements; (3) land of unknown ownership; (4) land gained through drainage of swamps by the State; and (5) land reclaimed from lakes or rivers. The total acreage to be affected has not been estimated as yet, and a vast amount of work will be necessary to determine boundary lines of present properties before distribution can begin.

All persons engaged in farming will be required to register with agricultural organizations under regulations described in the law and to withdraw their names when they change to some other occupation. The production of plants, minerals, and animal products through sowing, planting, cultivation, and raising of animals are termed "farming," and those continuously engaged in such activities qualify as "farmers." The land used for farming is known as "Culture Land" and is classified into fields, vineyards, gardens, woods, meadows, and pasturage, with a detailed description of each category. Land that has not been sowed, plowed, or planted for three successive years, without an acceptable reason, can be declared to be "barren" by the Ministry of Agriculture and may be subject to expropriation.

For purposes of the law, lands are classified as to size into three groups—small, medium, and large. Small landed property consists of land 500 dönüms (about 125 acres) or less in size; medium is that of 501 to 5,000 dönüms: and large is that comprising more than 5,000 dönüms. When land is to be divided, consideration will be given to the total owned by one person. If landed property is owned by several persons, the share of each will be considered separately. When expropriation and distribution are to take place in a certain section, due notice will be given in appropriate local papers. Owners of land in the locality will be held responsible for establishing the boundaries of their property, and, where deeds are lacking, sufficient information must be supplied to determine the extent and location of the land, such information to be subject to examination by the authorities. Thus, they will be able to identify State-owned and privately owned property.

The Ministry of Agriculture is vested with the authority to designate the specific property to be expropriated under the general terms set forth in the law. Regions (each vilâyet being considered a region) having large agricultural areas and those in which such areas are scarce will be announced; after studies of a given region are completed and the announcement is made, expropriation and distribution may be started immediately in that region.

The basis for determining an adequate price for lands expropriated is as follows: (1) In the case of expropriation of a plot of land larger than 5,000 dönüms (1,235 acres) in size, the value is determined according to that used in levying the land tax during the fiscal year of 1944 under terms of the land-tax law and the law of land surveying. (2) For land less than 5,000 dönüms in size, the same value will be doubled. (3) For lands of less than 2,000 dönüms (about 500 acres), the value will be trebled. If the value fixed as a basis for taxation of a piece of property is concealed or cannot be traced, for some reason,

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the committee authorized by the land-tax law will place a valuation on it in accordance with the value of the nearest similar land that was taxed during 1944.

Persons to Receive Lands

Land is to be given to heads of families according to the following sequence: (1) Those who do not own land but work as partners or tenants; (2) those having insufficient land; (3) those with no land but who have long supported themselves as agricultural laborers; (4) nomads, emigrants, and those forced to emigrate who are engaged in farming; (5) graduates of agricultural or veterinary schools, or those who have completed agricultural courses recognized by the Ministry of Agriculture and who do not own land, or own insufficient land; and (6) those not engaged in farming but who are believed by the Ministry of Agriculture to be willing to farm, even though they may not in some cases be heads of families. Priority under each of the classifications for heads of families is established as follows: (a) Those who have children; (b) those owning horses and sufficient means of production; (c) those who own their homes but have insufficient means of production; and (d) those who have sufficient means of production but no house. All persons must be Turks, must be eligible to exercise civil rights, must be farmers, or promise to farm, and cultivate the land themselves.

All who wish to obtain land must comply with various regulations, such as making their wish known to the authorities, supplying statements regarding their identity and civil position, and furnishing a description of their landownership in detail and of their equipment for farming. Finally, they must designate the location of the land desired.

Financial Terms

When land is expropriated, owners will be paid for it in 20 equal annual installments in the form of Treasury bonds, to be known as "Soil Bonds," bearing 4-percent interest. These bonds are to be issued under various regulations, and the expense of their issuance will be covered under authority given the Ministry of Finance.

When land is distributed, bills will be prepared in the name of the Government's Agricultural Bank to be paid by those receiving the land in 20 annual payments, without interest, beginning in January of the sixth year following the indebtedness contract. An interesting provision is that which stipulates the deduction of 5 percent of the remaining installments from the debtor's obligation for each of his children when they reach primary-school age.

A special fund is authorized, from which the Agricultural Bank will furnish credit to those receiving lands for buildings, equipment, and improvements to such items already on the lands, as well as for ensuring the yearly cultivation of the soil. Funds furnished for buildings, equipment, etc., are to be for a term of 20 years, operational credit, for 1 year. Interest is not to exceed 5 percent. Arrangements are also outlined whereby funds for work animals, seed, seedlings, etc., may be obtained. Steps to be taken by the Agricultural Bank for default in payments are likewise set forth in the law.

The final sections of the bill have to do with the terms under which the land distributed may be held, operated, and disposed of upon death of the owner, and a description of the various authorities granted the Ministry of Agriculture. Enforcement began with publication of the law, the terms of which will be carried out by the Cabinet.

Effects of the Law

The effects of the new legislation on the agriculture of Turkey are difficult to predict. The need for a land-reform program has long been felt, but the law as passed should be considered as only one of several factors in the program of agricultural development so important to Turkey's general agricultural economy. Its success is largely dependent upon the speed and efficiency of its administration; but, even so, satisfactory results hinge also upon the awakening among the great mass of simple agricultural folk of a desire for an improved standard of living.

Then, too, surplus production cannot be disposed of efficiently unless a general program of road construction is undertaken and improved handling and marketing methods are adopted. Irrigation projects are also needed in the drier areas. Mechanized farming is at present largely confined to large-scale, State-owned enterprises. The development of cooperative activities among the small farmers should be undertaken if modern implements and equipment are to be utilized effectively.

There is no doubt but that the Turkish farm laborer or other "landless" agricultural worker who becomes a farm owner will achieve a better relative social status through possession of his own land, his right to transmit the title to his children, and his improved position in the community. This general effect may come slowly, but under effective administration of the land it should come surely.

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